

# *MotorWeek Transcripts*

## ROAD TEST '2008 HYBRID ROUNDUP'

**JOHN DAVIS:** Hello, and welcome again to MotorWeek. We're glad to have you with us.

Americans love their cars. But they also love preserving their natural surroundings. Fortunately, hybrid technology is starting to provide us with advanced solutions to enjoy both. Hybrid vehicles are rapidly growing in both popularity and variety. But as promising as hybrids sound, is there one that fits your lifestyle?

We'll start our hybrid roundup with a little background. Gasoline electric hybrids are generally divided into two categories; full hybrid, also sometimes referred to as "strong," and mild hybrid.

Current full hybrids use a gasoline engine and at least one large electric drive motor. It can run on the gasoline engine alone, on electric power alone, or on a combination of both. A full hybrid generally delivers 20-to-30-percent better fuel economy than a comparable gasoline only vehicle.

Less expensive mild hybrids use electric power for assistance only. A small electric motor adds some power for passing and briefly when starting from a stand still. These systems deliver 10-20 percent better mileage than their gas counterparts.

Both systems allow the gas engine to shut down at stops and during coasting, and then quickly restart.

By far America's most popular gasoline-electric hybrid, the mid-size Toyota Prius hatchback, is a full hybrid in both technology and sales. With over 500,000 sold, the Prius is a massive sales and environmental success.

In the Prius, Toyota's Hybrid Synergy Drive combines a 1.5-liter 4-cylinder gas engine with a 50-kilowatt electric motor to produce a combined 110 horsepower.

It delivers government fuel economy ratings of 48 city/45 highway, the highest of any hybrid.

Hybrid Synergy Drive can also be found in Toyota's Camry Hybrid mid-size sedan, which mates a larger 2.4-liter gas engine, and a 105-kilowatt electric motor for a total of 187 horsepower.

Fuel economy estimates for the Camry Hybrid are 33 city/34 highway.

And for mid-size utility fans, Toyota builds the all-wheel drive Highlander Hybrid. This crossover boasts a 3.3-liter V6 gas engine and three electric motors for 270 horsepower.

Mileage ratings are 27 city/ 25 highway.

Toyota's full hybrid technology has also trickled down, or should we say trickled up, to its Lexus luxury brand.

The Lexus hybrid lineup starts with the mid-size GS 450h sedan, with a 3.5-liter V6 and a pair of electric motors under its stylish skin, it delivers 340 horsepower.

Government fuel economy ratings are 22 city/25 highway.

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Those who prefer an earth-friendly full-size luxury sedan can opt for the Lexus LS 600h. This 6-figure 4-door mixes a 5.0-liter gasoline V8 with two of water-cooled electric motors. The result is a muscular 438 horsepower, and more modest fuel economy ratings of 20 city/22 highway.

Of course Lexus doesn't leave utility fans out. They get the 5-passenger RX 400h.

It uses the same drive system as the Highlander, a 3.3-liter V6 and up to 3 electric motors, rated at 268 horsepower combined.

Fuel economy ratings are 27 city/24 highway for the front-wheel-drive model, and 26 city/24 highway for the all-wheel-drive version.

Compared to Toyota's fleet of green machines, Honda's Civic Hybrid doesn't look as formidable.

But this sleek little sedan holds its own, with Honda's full hybrid Integrated Motor Assist powertrain that consists of a 1.3-liter gasoline 4-cylinder and a 15-kilowatt electric motor, for 110 horsepower.

The system delivers superb fuel economy ratings of 40 city/45 highway. Domestic brand offerings lead off with a trio of full hybrids build by the Ford Motor Company. The Ford Escape Hybrid, Mercury Mariner Hybrid and Mazda Tribute Hybrid. All utilize Ford's 2.3-liter Duratec gasoline 4-cylinder engine, and a 70 kilowatt electric motor to deliver a combined 133 horsepower. And all three compact crossovers deliver government fuel economy ratings of 34 city/30 highway with front-wheel-drive, and 29 city/27 highway with all-wheel-drive.

General Motors is making a big push into hybrids, with its Chevrolet, Saturn, and GMC brands. GM hybrids are available in both mild form, and new full two-mode design.

Saturn's 2008 mild hybrid lineup consists of its VUE Green Line compact crossover utility, and Aura Green Line mid-size family sedan.

Both use the 2.4-liter Ecotec 4-cylinder and a 10-kilowatt electric motor.

Output is 164-horsepower in the Aura with fuel economy ratings of 24 miles-per-gallon city/32 miles-per-gallon highway.

In the front-wheel drive only VUE Green Line, its 170 horsepower equates to mileage ratings 25 city/32 highway.

Chevrolet offers its Malibu mid-size sedan in mild hybrid form with the same powertrain used in the Aura and VUE. It delivers fuel economy ratings of 24 city/32 highway.

GM's two-mode full hybrid system debuts this year in the rear and four-wheel drive Chevrolet Tahoe Hybrid, and GMC Yukon Hybrid.

The two-mode system consists of a 6.0-liter V8 engine with Active Fuel Management cylinder cutoff, and GM's complex Electrically Variable Transmission, all making a very efficient 332 horsepower, and still allowing for a trailer tow capacity of over 6,000 pounds.

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The EVT combines two 60-kilowatt electric motors, 3 planetary gear sets, and 4 hydraulic wet clutches, providing substantial electric power during both startup and at highway speeds.

Government fuel mileage ratings are 21 city/22 highway for 2-wheel-drive, and 20 city/20 highway for 4-wheel-drive.

The two-mode system will be installed in the Cadillac Escalade next year. A two-mode version of the Chevrolet Silverado and GMC full-size pickup trucks are due this fall.

Saturn has also announced that the VUE will get the first application of a V6-based two-mode full hybrid system in early 2009.

Sales of hybrid vehicles in the U.S. have increased by at least 50-percent every year, and as hybrid choices continue to grow, so will sales.

And so will our and our children's chances of enjoying an environment that is cleaner, greener, and also bluer.